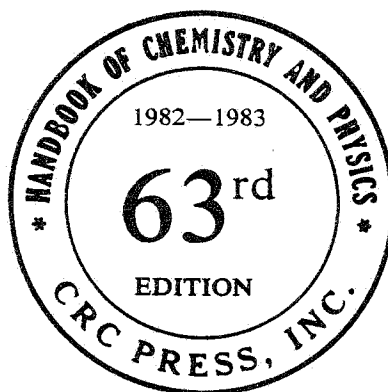


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# CRC Handbook of Chemistry and Physics

A Ready-Reference Book of Chemical and Physical Data



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In collaboration with a large number of professional chemists and physicists whose assistance is acknowledged in the list of general collaborators and in connection with the particular tables or sections involved.



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## PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (Continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc			No.
								Cold water	Hot water	Other solvents	
Boric acid											
b183	ortho-	Boracic acid. $H_3BO_3$	61.83	col, tricr, 1.337, 1.461, 1.462	1.435 <sup>15</sup>	169 ± 1 tr to $HBO_2$	-1½ $H_2O$ , 300	6.35 <sup>20</sup>	27.6 <sup>100</sup>	28 <sup>20</sup> glyc; 0.0078 eth; 5.56 al; 20. 20 <sup>20</sup> MeOH; 1.92 <sup>20</sup> liq $NH_3$ ; sl s acet	b224 b225
b184	tetra- (pyro-)	$H_2B_4O_7$	157.26	vitr or wh powd.				s	s	s al	b226 c1
b185	fluor-	$HBFe$	87.81	col liq			d 130	∞	∞	s al	c2
b186	Borinoaminoborine	$B_2H_7N$	42.68	col liq		-66.5	76.2			s al	c3
b187	Boron	B	10.811	yel monocrl or br amorph powd	2.34, 2.37 amorph	2300	2550	i	i	s triborine tri-amine	c4
b188	arsenate	$BA_3O_4$	149.73	wh cr tetrag, 1.681, 1.690	3.64	subl ca 700		v sl s	1.4 <sup>100</sup>	i al; s inorg a	c5
b189	bromide, tri-	$BBr_3$	250.54	col fum liq, $n_D^{16.1}$ 1.5312	2.6431 <sup>18,4</sup>	-46	91.3 ± 0.25	d		s al, $CCl_4$	c6
b190	bromide, di-, iodide	$BBr_2I$	297.53	col liq			125	d	d		c7
b191	bromide, mono-, diiodide	$BBrI_2$	344.53	col liq			180	d	d		c8
b192	(di-) bromide, mono-pentahydride	$B_2H_4Br$	106.67	col gas		-104	ca 10	hyd to $HBO_2$ , $HBr + H_2$			c9 c10 c11 c12
b193	(tetra-) carbide	$B_4C$	55.26	blk rhbdr	2.52	2350	>3500	i	i	i a; s fus alk	
b194	chloride, tri-	$BCl_3$	117.17	col fum liq, 1.4195 <sup>16,7</sup> α line $H_2$	1.349 <sup>11</sup>	-107.3	12.5		d to $HCl + H_2BO_3$	d al	c13
b195	fluoride, tri-	$BF_3$	67.81	col gas	2.99 g/l	-126.7	-99.9	106 (762 mm)	d	d al; s conc $H_2SO_4$	c14 c15 c16
b196	fluoride dihydrate	$BF_3 \cdot 2H_2O$	103.84	col liq; $n_{HE}^{20}$ 1.31498	1.6316 <sup>20</sup>	6		d	d	s eth, dioxan	c17
b197	hydride	Diborane, boroethane. $B_2H_6$	27.67	col gas	liq: 0.447 <sup>-11</sup> sol: 0.577 <sup>-183</sup>	-165.5	-92.5	sl s d to $H_2BO_3 + H_2$		d 1.6° al; s $NH_4OH$ , conc $H_2SO_4$	c18 c19 c20 c21
b198	hydride	Dihydrotetraborane, borobutane. $B_4H_{10}$	53.32	col gas, pois	0.56 <sup>-20</sup>	-120.8	16	sl s, d		s bz; d al	
b199	hydride	Pentaborane. $B_5H_9$	63.13	col liq	0.66°	-46.82	58.4	d			c22
b200	hydride	Hexaborane. $B_6H_{10}$	74.95	col liq	0.69°	-65	0 <sup>72</sup>	d			c23
b201	hydride	Decaborane. $B_{10}H_{14}$	122.22	wh cr	0.94 <sup>25</sup>	99.5	213	sl s	d	v s $CS_2$ ; s al, eth bz	c24
b202	iodide, tri-	$BI_3$	391.52	col pl, hydr	3.35 <sup>20</sup>	49.9	210	d	d	d al; v s $CS_2$ , bz, $CCl_4$	c25 c26 c27 c28 c29 c30 c31
b203	nitride	$BN$	24.82	wh, hex	2.25	subl ca 3000		i	sl d	sl s h a	
b204	oxide	$B_2O_3$	69.62	rhomb cr, 1.64, 1.61	2.46 ± 0.01	450 ± 2	ca 1860	sl s	s		c32 c33 c34 c35 c36 c37
b205	oxide glass	$B_2O_3$	69.62	col, vitr 1.485	1.812 <sup>25</sup>	ca 450		1.1°	15.7 <sup>100</sup>	s al, a	
b206	phosphide	$BP$	41.78	maroon powd		ign 200		i	i	i all solv	
b207	triselenide	$B_2Se_3$	258.50	yel-gray powd.				d	d		
b208	(hexa-) silicide	$B_6Si$	92.95	blk cr	2.47			i		s $HNO_3$ ; d $H_2SO_4$ ; i KOH	c32 c33
b209	(tri-) silicide	$B_3Si$	60.52	blk rhomb	2.52			i		sl s $HNO_3$ ; d $H_2SO_4$ , KOH	
b210	sulfide, penta-	$B_5S_3$	181.94	col, tetrag	1.85	390		d	d	d al	
b211	sulfide, tri-	$B_3S_2$	117.81	wh cr or vitr	1.55	310		d		sl s $PCH$ , $SCH$ ; d al	c34 c35 c36 c37
b212	Borotungstic acid	$H_2BW_{12}O_{40} \cdot 30H_2O$	3402.49	tetr, cr	3	45-51		s		s al, eth	
b213	Bromic acid	$HBrO_3$	128.92	known in sol only, col or yelsh		d 100		v s	d		
b214	Bromine	$Br_2$	159.808	dk red liq, 1.661	2.928 <sup>20</sup> , 3.119 <sup>20</sup>	-7.2	58.78	4.17°, 3.58 <sup>20</sup>	3.52 <sup>20</sup>	v s al, eth, chl, $CS_2$	c38
b215	azide	Bromoazide. $BrN_3$	121.93	cr, red liq		ca 45	exp			s eth, KI; sl s bz, ligr	c39
b216	chloride	$BrCl$	115.36	red-col liq or gas		ca -66 d 10	ca 5	s d		s eth, $CS_2$	c40
b217	fluoride, mono-	$BrF$	98.91	red-br gas		d -33	-20				
b218	fluoride, penta-	$BrF_5$	174.90	col liq	2.466 <sup>25</sup>	-61.3	40.5	d	d		
b219	fluoride, tri-	$BrF_3$	136.90	col-gray-yel liq	2.49 <sup>18</sup>	(-2) 8.8	135	d viol. to $O_2$ , $HOBr$ , $HF$ , $HBrO_3$		d alk	c41 c42 c43
b220	hydrate	$Br_2 \cdot 10H_2O$	339.97	red oct	1.49	d 6.8		s			c44
b221	oxide, di-	$BrO_2$	111.91	lt yel		d 0					
b222	oxide, mono-	$Br_2O$	175.82	dk br		-17 to -18				s, d $CCl_4$	c45
b223	(tri-) oxide, oct-	$Br_3O_8$ (or $Br_3O_9$ )	367.72	wh		stable at -40					orthopt